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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,441	03/26/2004	Scott Michael Davis	147161-2	1481
23413	7590	04/02/2007		
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER MORILLO, JANEL COMBS	
			ART UNIT	PAPER NUMBER
			1742	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/02/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/811,441	<b>Applicant(s)</b> DAVIS ET AL.	
	<b>Examiner</b> Janelle Combs-Morillo	<b>Art Unit</b> 1742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 22-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>061704.080906</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's election with traverse of group I in the reply filed on January 23, 2007 is acknowledged. The traversal is on the ground(s) that the articles cannot be formed by a materially different process. This is not found persuasive because though said article claims are product by process claims, said claims are held to be limited only to the structural limitations implied by said process steps. See MPEP 2113. Because said product can be made by a materially different process (substantially as set forth in the restriction requirement mailed 1/16/2007), and therefore is maintained by the examiner.

The requirement is still deemed proper and is therefore made FINAL.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunton (US 7,060,217) in view of Ekendahl (US 5,976,288).

Dunton teaches a process for forming a shaped composite multilayer article by: forming an aesthetic laminate comprising a arylate polyester polymer adhered to a compatible resin containing a colorant (column 1 lines 62-67), which qualify as the claimed surface component/aesthetic layer. The compatible resin can contain polycarbonate (column 2 line 6). The laminate is thermoformed (column 3 lines 1-12), and preferably the compatible resin layer is

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adj to the mold surface (column 3 lines 23-25). A substrate (#14) is used for impart desirable stiffness to the article, and can include a polycarbonate resin (column 3 line 67, column 4 line 23). Dunton also teaches a balance layer can be used (column 6 lines 4-10). The substrate material is heated to an appropriate softening temperature and bonded to the surface component/aesthetic layer (column 6 lines 1-4). Dunton does not teach bonding the surface component and the substrate by thermoforming.

However, Ekendahl teaches a method of bonding multilayer articles such as a thermoplastic substrate layer and additional cover layers (abstract) by heating the substrate layer (column 2 line 64) and thermoforming the substrate layer to the cover layers (column 3 line 66). Ekendahl teaches the thermoplastic substrate layer and cover layers are preferably formed, at least in part, from the same polymers and are compatible thermoplastic materials (column 2 lines 49-51). It would have been obvious to one of ordinary skill in the art to bond the layers taught by Dunton by thermoforming, because Dunton teaches said layers comprise polycarbonate (compatible/ same thermoplastic materials) and because Ekendahl teaches that said bonding method is suitable to laminate a multilayer structure of compatible thermoplastic layers.

Concerning claims 1, 11, 12, which mention a thermoforming pressure, said pressure is held to be a result effective variable. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages"). A particular parameter

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must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Thermoforming at given temperature and pressure combination is held to be a result effective variable, wherein the expected result is formation of a suitable bond.

Concerning claims 2, 4, 6, Dunton teaches (at column 1 line 56) that it is known in the art to use a tie layer to promote adhesion between layers.

Concerning claims 3, 5, 7, 14-19, as stated above, Dunton teaches process substantially as claimed.

Concerning claims 10 and 13, as seen in Fig. 4 of Dunon, the surface component #3 is adjacent a mold form, and is placed with the aesthetic side against or in proximity to the upper tool surface (column 5 lines 66-67), and wherein the top section of the mold is cooled, and maintained at temperatures that the arylate layer is not too viscous (column 6 lines 18-21). The combination of Dunton and Ekendahl teach applying a pressure in a die by thermoforming, as stated above. The instant a die/pressure transmitting surface taught by Dunton and Ekendahl is held to read on the instant limitation of 'conformable pressure transmitting medium'.

4. Claims 8, 9, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunton and Ekendahl in view of Reafler (US 5,026,448).

Dunton and Ekendahl are discussed in paragraphs above.

Concerning claim 8, it would have been obvious to one of ordinary skill in the art to thermoform the preformed aesthetic layer (substantially as taught by Dunton) with either a) not removing from the mold or b) placing in 2<sup>nd</sup> thermoforming mold, and further thermoforming the

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compatible substrate layer to said aesthetic layer (as taught by Dunton and Ekendahl), because Reafler teaches sequentially thermoforming improves the desirable surface qualities when such materials are stretched by thermoforming and bonded to a substrate (column 2 lines 30-32), and depending on the intended thermoformed profile/ application (i.e. for an identical profile it would have been obvious to not remove from thermoforming apparatus in view of optimizing efficiency).

Concerning claims 20 and 21, it would have been obvious to one of ordinary skill in the art to thermoform the preformed aesthetic layer (substantially as taught by Dunton) and separately thermoforming the compatible substrate layer, and further thermoforming or adhesively bonding together (with a tie layer, etc), because Reafler teaches sequentially thermoforming in separate steps improves the desirable surface qualities when such materials are stretched by thermoforming and bonded to a substrate (column 2 lines 30-32), and because Dunton teaches (at column 1 line 56) that it is known in the art to use a tie layer to adhere layers.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCM

March 23, 2007

ROY KING   
SUPERVISORY PATENT EXAMINER  
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